

REMARKS

The courtesies extended to the undersigned by Examiner Scott Haugland during the interview held September 1, 2009 in the subject US patent application are acknowledged and appreciated. As was discussed with Examiner Haugland, independent claim 34, the sole independent claim now pending in the application, as well as all but one of the dependent claims now pending, have been amended in an effort to place the claims in condition for allowance without raising new issues and without requiring the Examiner to conduct further searching. It is believed that the claims now pending in the application are patentable over the prior art cited and relied on, taken either singly or in combination. Reexamination and reconsideration of the application, and allowance of the claims is respectfully requested.

As discussed with Examiner Haugland, and as now recited in all of the pending claims, the subject invention is directed to a turning bar that is usable in a web fed printing machine to change a direction of travel of a web that typically has just been printed. As may be seen in the drawings, the turning bar, generally at 01, is shiftable between at least two positions which are shown in Figs. 1c and 1d of the amended formal drawings. In either position, the turning bar guides a web of paper over its surface and changes the direction of travel of the web.

To facilitate a smooth passage of the web of material about the turning bar, the surface of the turning bar is provided with a plurality of openings. These allow the passage of a fluid under pressure so that an air cushion is formed about the surface of the turning bar. In the past, turning bars were provided with mechanisms that were usable to shut off the flow of the fluid under pressure to areas of the turning bar which were not adjacent the web being guided. This was done to reduce noise levels and to save compressed air. However, such prior mechanisms, which typically included slidable and rotatable inner tubes, were complex mechanical structures.

In contrast, in the present invention, as recited in currently amended claim 34, the turning bar includes only two elements. One is a rigid load bearing hollow support and the other

is a surface coating of a micro-porous, fluid permeable, open pored sinter material. The rigid load bearing hollow support has an inner surface and an outer surface. It is provided in the form of a fluid permeable support material that has a plurality of fluid openings extending from the inner surface to the outer surface. A supply of fluid under pressure is supplied to the inner surface of the hollow support and passes through the plurality of fluid openings to the outer surface of the rigid, load bearing hollow support.

The micro-porous, fluid permeable, open pored sinter material is applied as a surface coating to, and covers the fluid permeable support material on the full circumferential outer support surface of the rigid, load bearing, hollow support. This applied coating of the micro-porous, fluid permeable open pored sinter material provides a plurality of micro openings in the form of open pores. These micro-openings are sized to allow emergence of the fluid under pressure from the plurality of fluid openings over the full circumferential surface.

The use of the plurality of micro-openings makes the structure of the turning bars far less complex. All of the prior art devices, with their movable hole covering elements, have been too complicated and have been prone to failure. The turning bar in accordance with the present invention has no moving parts, does not require some type of assembly to close off the holes in a portion of the turning bar that is not adjacent the web being turned or guided and operates without the generation of a great deal of noise or the loss of a large amount of compressed air.

In the Final Office Action of June 11, 2009 in the subject application, all of the claims pending in the application were finally rejected under 35 USC 103(a) as being unpatentable over US Patent No 6,364,247 to Polkinghorne in view of either US Patent No 5,957,360 to Helinski or US Patent No 5,293,699 to Faust and further in view of US Patent No 5,082,533 to Pulkowski and US Patent No 5,520,317 to Eckert. It was asserted that Polkinghorne shows a guide element of a web processing machine and having a rigid load bearing support 146 and further having a layer of a micro-porous, fluid permeable open pored material covering the support. This covering was asserted as having a plurality of micro-openings. It was admitted

that Polkinghorne does not show a sinter material and does not show means supporting the guide element movable between first and second angular with respect to a direction of web travel.

Helinski was cited as teaching a fluid flow restricting layer of a sinter material. Faust was also cited as showing the use of a flow restricting material 34 of a sinter material. Pulkowski was cited as showing a sintered porous layer on a support and formed by spray coating. Eckert was cited to show a web guide that is adapted to be moved between two positions. It was asserted that these references could be combined to arrive at the subject invention, as recited in claim 34 as previously amended.

As discussed with Examiner Haugland during the interview, the various references cited and relied on, either individually or used in combination, would not result in a device similar in structure to the turning bar recited in previously presented claim 34 and even more clearly as presented in currently amended claim 34. It is believed that the following discussion will support this conclusion and will point out the differences between the individual references, any resultant combination that could reasonably be made from them, and the subject invention, as recited in currently amended claim 34.

In the primary reference to Polkinghorne, there is disclosed a static web guide. This is not a turning bar and is not shiftable between first and second positions. As may be seen quite clearly in Fig. 2, there is provided a multi-layer cover, generally at 130 which can be placed on an outer surface of a tube 146, as shown in Figs. 4 and 5. The multi-layer cover includes a microporous exterior layer 132 and an interior layer of open weave metal wire cloth or fabric 134. As discussed at column 4, lines 57-63, this multi-layer sheet 130 is mounted on, wrapped around or otherwise in contact with the tube 146. It can be connected or mounted on the tube 146 by use of an adhesive, by resistive welding, by a clamping system or the like. It is thus very clear that the Polkinghorne cover is a multiple layer, composite member which is self-supporting, which is removable from the tube that it is placed on and that does not utilize a

surface coating of a micro-porous, fluid permeable open-pored sinter material. In the Polkinghorne assembly, there are at least three different layers which are used to form the web guide. The microporous exterior layer 132 is spaced apart from the outer surface of the tube 146 by the interposed open weave metal wire cloth or fabric 134. The outer layer 132 and the screen 134 are formed remotely from the tube or pipe 146 by an electro-deposition process, as depicted in Figs. 7-10. The resultant cover is placed on the tube 146 and is then secured in place. It is very different from the surface coating of the micro-porous, fluid permeable, open pored sinter material, which is applied in direct contact with, and covering the hollow support, as recited in currently amended claim 34.

The secondary references to Helinski and to Faust do not provide the teachings of currently amended claim 134 which are missing from the Polkinghorne reference. Referring initially to the Helinski reference, US Patent No 5,957,360, it is noted that there is disclosed a system and a device for transporting a flexible film. As may be seen in Fig. 5, an air film roll 50 includes a cylindrical wall portion 52 with a plurality of slots or holes 54 arranged over only a portion of the circumferential surface thereof. A three layer cover is placed about the wall portion 52 of the air film roll 50. This three layer cover is formed with an inner layer 66 of a stainless steel mesh. A porous layer of a woven or sintered plastic material 68 is positioned between the inner stainless steel screen layer 66 and an outer layer 70 which is also formed of a thin stainless steel cover plate. This composite structure 66, 68 and 70 is securable in place on the cylindrical wall 52 by a securement spring 58.

Clearly, the Helinski device is a removable, multiple layer cover. It is a three layer sandwich whose middle layer is a woven or sintered plastic. This three layer cover is formed remotely from the tube or pipe 50 and is clamped in place by a spring. Its substitution for the two layer cover disclosed in Polkinghorne would not render obvious the device recited in currently amended claim 34. Again, there is no teaching or suggestion of a surface coating of a micro-porous, fluid permeable, open pored sinter material applied in direct contact with and

covering the fluid permeable support material on the full circumferential outer support surface of the rigid load bearing hollow support.

The other secondary reference to Faust is equally non-applicable to the subject invention. It is directed to a device that is usable to guide a coated strip. In the embodiment relied on by the Examiner, Fig. 4, there is provided a manifold 6 that is a hollow tube with a pair of spaced fluid passages 8 at only one small portion of the circumferential surface. A structurally self-supporting jacket 34 of sintered metal is rotatably supported about, and is spaced from the manifold 6, by a plurality of sliding seals 21. This jacket 34 has a plurality of planar faces 35 spaced circumferentially about its outer surface. Each one of these planar faces 35 can be positioned beneath the web of material by rotation of the jacket 34 with respect to the manifold 6. This jacket 34 is spaced from an outer projective jacket 22 by another sliding seal 23.

In the discussion of the Faust patent, during the interview held on September 1, 2009, mention was made of Fig. 2 of Faust. As was discussed with Examiner Haugland, Fig. 2 shows a manifold 6 with only three spaced fluid openings 8. The manifold 6 is surrounded by a jacket of a layer of felt, generally at 20. That felt 20 is made of a polytetrafluoroethylene-coated, non-woven fabric. It is quite clear that this jacket 20 is not at all similar to the surface coating recited in currently amended claim 34 of the subject invention.

If the Faust reference were to be combined with the Polkinghorne device, the result again would not be at all similar to the turning bar recited in currently amended claim 34. The multiple layer assembly of Fig. 5 of Faust would replace the two layer material of Polkinghorne. Even a combination of Faust and Helinski and Polkinghorne would not render claim 34 unpatentable. At best, the jacket 34 of sintered metal of Faust could possibly be substituted for the intermediate second porous layer of woven or sintered material 68 of Helinski. However, since the Helinski cover is wrapped around the wall portion 52 of the air film roll 50, it is not understood how the flexible second layer of Helinski could be replaced by the rigid, self-

supporting tubular jacket 34 of Faust. The combination of these two or three references advanced in the Office Action is not workable. Further, it would not result in a device that would be similar to currently amended claim 34 for all of the reasons set forth above.

The Pulkowski reference adds nothing of value to the combination of Polkinghorne in view of either of Helinski or Faust, or both. As was discussed with Examiner Haugland, the Pulkowski device, U.S. Patent No. 5,082,533, is directed to a device for use in removing moisture from a web, generally at W in Fig. 1. This is done by squeezing the web in between a blanket 14 and a press member 12. Pressure 20 is exerted on a press shoe 18. In the arrangement shown in Fig. 2, the press member 12A has an outer layer 28 that is a spray coated sintered layer. The purpose of this outer layer is to absorb some of the moisture that is given up by the web WA. In this instance, the press member 12A acts somewhat like a sponge.

It appears that there is little in common between the primary Polkinghorne reference and the Pulkowski reference. In Polkinghorne, a web guide roller is usable to provide a cushion of air between the web and the roller to reduce frictional contact between the web and the guide. In Pulkowski, the device is intended to squeeze a wet web between a press roller and an extended nip press shoe in order to drive moisture out of the web. The two devices have virtually nothing in common. It is not understood how any teaching of the Pulkowski patent could be combined with any teaching of the Polkinghorne patent. The mere fact that Pulkowski uses the term "sintered layer" is not sufficient to make the Pulkowski reference combine with the Polkinghorne patent.

The patent to Eckert is assigned to the assignee of the subject application. It is clearly directed to a prior art type of turning bar that uses a slidable and rotatable inner tubular assembly to block off air holes which are not being used. While it admittedly has the ability to be shifted between two use positions, that teaching by itself is not sufficient, in combination with any or all of the other cited references to render currently amended claim 34 obvious to one of skill in the art. At best, if Eckert were to be combined with the Polkinghorne reference, it would

result in a turning bar having a multiple layer, removable cover as taught by Helinski or Faust. Since the Pulkowski device is intended for a completely different use, it is not realistic to suggest that it could be added to the combination in any meaningful way.

Examiner Haugland's time in reviewing the prior art with the undersigned and in allowing the undersigned to propose several possible claim modifications during the course of the interview is appreciated. It is submitted that the presentation of currently amended claim 34 at this time is an earnest effort on the part of the undersigned to place the application in condition for allowance without raising any new issues and without requiring the Examiner to conduct additional searching. The changes made in the language of claim 34 do not introduce new features but instead make more clear the differences that exist between the claimed structure and the prior art cited and relied on. The subject application has gone through four Office Actions and three substantive Amendments. The cited prior art has stayed essentially the same. As discussed with Examiner Haugland, it is believed that the patentable differences between the prior art and the present invention are set forth with sufficient clarity to warrant the allowance of claim 34.

The preamble of claim 34 was amended to recite that the invention is a turning bar for a web printing machine. That preamble change has necessitated a similar change to the preambles of all of the dependent claims. Several of these dependent claims have also been amended to conform their language to that of currently amended independent claim 34. One of the previously pending dependent claims has been cancelled because its language has now been included in currently amended independent claim 34. All of the dependent claims are believed to be allowable because of their dependencies from believed allowable, currently amended independent claim 34.

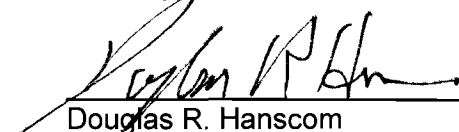
SUMMARY

Independent claim 34 has been amended in a manner which is believed to place it in condition for allowance without raising any new issues and in a manner that will not require the Examiner to conduct any additional searching. It is believed that this Second Amendment After Final Rejection is an earnest effort by the undersigned to place the application in condition for allowance. Such action and the forwarding of the application to issue is respectfully requested.

Respectfully Submitted,

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